

REMARKS

Claims 1-4, 7-12, 14-17 and 20-21 have been amended. Claims 5-6, 13, and 18-19 have been canceled. Previously withdrawn claims 22-31 have also been canceled with Applicants reserving their right to file a divisional application. Minor typographical errors have been corrected in the specification. Reexamination and reconsideration are respectfully requested.

Amendments to the Specification

Applicants have amended the specification to correct an error with respect to the reference numbers identified therein. No new matter has been added.

Priority Claim

In the Office Action, it was noted that the foreign priority of JP 2002-143112, filed May 17, 2002, was not taken into consideration. Applicants respectfully submit that this priority document was properly submitted in the PCT International Application as evidenced by the attached Form PCT/IB/304 acknowledging its receipt. As such, pursuant to M.P.E.P. § 1893.03(c), said document should have been received by the USPTO from the International Bureau. An acknowledgement to that effect is respectfully requested.

Information Disclosure Statement

The Office Action indicates that the material submitted with Applicants' Information Disclosure Statement of November 16, 2004 was not considered. Accordingly, Applicants submit herewith a further Information Disclosure Statement including the cited documents which were listed on the International Search Report provided by the International Search Authority. In that regard, Applicants respectfully point out that document JP 2001-056823 is a Japanese counterpart to the cited and applied Nakano reference (EP 1 134 674 A1) forming a basis of the prior art rejections discussed below.

Rejections Under 35 U.S.C. § 101

In the Office Action, claims 1-21 were rejected under 35 U.S.C. § 101 for allegedly being directed toward non-statutory subject matter. In that regard, the Office Action rejected claim 1 as being directed toward a "data product" lacking any physical articles or objects that would constitute a machine or a manufacture within the meaning of 35 U.S.C. § 101. Applicants respectfully submit the amendments made with respect to claim 1, as well as claims 8 and 14 written into independent form, obviate this rejection.

In particular, Applicants' claim 1 has been amended to recite a map data processing apparatus that includes a recording medium drive unit that receives a recording medium in which are recorded map data, as well as an update data

acquisition unit that obtains update data and a processing unit that updates the map-related information by using the update data and management information. The processing unit executes processing of the map data. Accordingly, Applicants respectfully submit claim 1 recites statutory subject matter within the strictures of 35 U.S.C. § 101. Similarly, claims 8 and 14 now written in independent form also recite a map data processing apparatus which is statutory subject matter under 35 U.S.C. § 101.

Prior Art Rejections

In the Office Action, claims 1-10 and 13-21 were rejected under 35 U.S.C. § 102(a) as being anticipated by Nakano et al. (EP 1 134 674 A1). In view of the amendments made herein and the following remarks, Applicants respectfully traverse this rejection.

Applicants' amended claim 1 recites, *inter alia*, a recording medium drive unit that receives a recording medium in which are recorded map data, an update data acquisition unit, and a processing unit. The recorded map data includes a structure having map-related information divided into units of a plurality of divisions into which a map is divided and a structure having¹ management information for the map-related information (see ¶¶ [0048], [0051] – [0067]). The update data acquisition unit obtains update data for the

¹ Paragraph cites are to the corresponding U.S. Published Application No. US 2005/0203937 A1.

map-related information in units of the individual divisions (see ¶¶ [0132] – [0138]). The processing unit updates the map-related information in units of the individual divisions by using the obtained update data and the management information, and executes processing of the map data based upon the map-related information, the update data, and the management information (see ¶¶ [0068] – [0073], [0132] – [0138]).

In particular, a plurality of levels is defined, each in correspondence to one of a plurality of different scaling factors at which the map is rendered (see ¶ [0053]). Further, a plurality of sets of the map-related information is provided in correspondence to the plurality of levels (see ¶ [0053]). For the map-related information provided in units of the individual divisions, at least one type of map-related information available at all levels and another type of map-related information available at, at least, one level, are provided separately from each other (see ¶¶ [0060], [0092]). The processing unit executes processing of the map data by using the map-related information in units of the individual divisions provided separately with the one type and the other type of map-related information (see ¶¶ [0132] – [0138]).

As can be seen from the exemplary embodiment described with respect to Figure 3, a plurality of levels (level 3 and level 4) are defined, each level corresponding to a different scaling factor at which the map is rendered (page 25,

line 23 – page 26, line 19)². In Figure 3, level 3 is scaled at a factor of 1/400,000 and level 4 is scaled at a factor of 1/1,600,000 (page 26, lines 13-16). While the levels are provided at varying scaling factors, a common area is covered by the various levels of map data (page 26, lines 5-11).

The map-related information that is divided into units (such as blocks and meshes 102, 103) of a plurality of divisions (such as the block division and the mesh division) includes a set for each of the plurality of levels (see page 28, lines 5-20). Such map-related information provided in units of the individual divisions has at least one type of map-related information available at all levels (for example, so-called “basic data” such as the mesh internal management information 111 and the background data 112 for map display) (page 29, lines 11-16). And another type of map-related information available at, at least, one level provided separately from each other (such as the so-called “extension data” for example locator data 113, network data 114 and guidance data 115) (page 29, lines 16-24).

Thus, Applicants’ invention provides a map data processing apparatus having a processing unit that executes the processing of the map data by using the map-related information in units of the individual divisions provided separately with the one-type of map-related information and the other type of

² Page and line number citations are to the specification as filed.

map-related information. This has several advantages as described in the specification (see page 74, line 12 – page 76, line 4).

In contrast to Applicants' claimed invention, Nakano (EP 1 134 674 A1) fails to disclose, suggest, or teach Applicants' invention. In that regard, Nakano discloses a conventional hierarchical structure of a map. However, Nakano fails to disclose map-related information wherein one type of map-related information (such as basic data) available at all levels and another type of map-related information (such as extension data) available at at least one level are provided separately from each other.

Nakano merely states "As shown in Fig. 7, the background data is composed of a basic background table and a detailed background table. As can be clearly seen from Fig. 8(a), the basic background table is a group of graphic data which is used as the base when displaying the background of the map, which shows a river, a railroad, and a green belt, for example. On the other hand, as is clear from Fig. 8(b), the detailed background table is a group of graphic data which is used to display grater details of the background of the map, such as bridges, buildings, etc." (see ¶ [0078], Fig. 7 of Nakano), and also disclose "For example, when the terminal device 102 desires to quickly receive a wide-area map rather than a detailed map, the center station 101 can preferentially send basic data (rough data) only. Further, the center station 2 can send the detailed data after the terminal device 102 has completely received

the basic data (rough data). This allows the terminal device 102 to use the basic data (rough data) and the detailed data in combination.” (see ¶ [0306] of Nakano).

Thus, while Nakano coincidentally uses terms such as “basic” data and “detailed” data, they are a basic background table and a detailed background table that are a single type of data of background data. Nakano does not disclose Applicants’ claimed language “as the map-related information provided in units of the individual divisions, at least one type of map-related information and another type of map-related information are provided separately from each other” as recited in claim 1.

Claim 1 includes the further novel feature of “as the map-related information provided in units of the individual divisions, at least one type of map-related information available at all levels and another type of map-related information available at, at least, one level are provided separately from each other”. Nakano does not disclose and teach such a feature (see ¶ [0067] of US 2005/0203937 A1). Hence, Nakano cannot disclose a processing unit that executes processing of the map data by using the map-related information in units of the individual divisions provided separately with the one type and the other type of map-related information. There is no disclosure of one type of map-related information that is available at all levels being provided separately from another type of map-related information available at at least one level as the

map-related information that is provided in units of the individual divisions within a particular level.

In view of the foregoing, Applicants respectfully submit amended claim 1 is patentable over Nakano. Further, claims 2-4 and 7 depend from claim 1 and are also submitted to be patentable thereover.

Applicants have amended claim 8 into independent form reciting a map data processing apparatus including the recording medium drive unit, update data acquisition unit and processing unit as discussed above with respect to claim 1. A plurality of levels are defined, each corresponding to a different scaling factor at which the map is rendered. A plurality of sets of map-related information is provided corresponding to the plurality of levels. And, the map is divided into a plurality of divisions at each level. Each set of map-related information, corresponding to a given level, is divided in units of the individual divisions into which the map is divided (see ¶¶ [0053] – [0057]).

Moreover, Applicants' claim 8 requires that a connecting point at which the map-related information corresponding to one of two divisions is correlated to the map-related information corresponding to the other division be present at a geographically matching position within the two divisions. In that regard, these two divisions respectively belong to levels different from each other (see ¶¶ [0159] – [0163]). Two-dimensional coordinate values of the connecting point at a level at which the map is rendered in greater detail are attached to two-

dimensional coordinate values of the connecting point at a given level (see ¶¶ [0128] – [0129], [0159] – [0163]). The processing unit executes processing by using the two-dimensional coordinate values of the connecting point at a given level to which are attached the two-dimensional coordinate values of the connecting point at a level at which the map is rendered (see ¶¶ [0159] – [0163]).

This advantageously allows for connecting data at higher end lower levels, as a result of which data updates do not need to conform to any specific navigation system model or standard (see page 76, lines 5-12). Additional advantages are obtained by including information relating to the connecting point containing a parameter other than the two-dimensional coordinate values but in addition to them (see claim 10) such as height information indicating the height of the connecting point (see claim 11). This allows for a much greater reliability in distinguishing between connecting points that are difficult to discern (see page 76, lines 13-23).

In contrast, Nakano fails to disclose or suggest Applicants' map data processing apparatus as set forth in claim 8. While Nakano discloses tracing the connection from a road in one unit to a road in a neighboring unit on the basis of coordinate information about neighboring nodes of the units (see Abstract), there is no disclosure of utilizing a connecting point based on geographically matching positions within two divisions that belong to levels different from one another.

Nor does Nakano disclose attaching two-dimensional coordinate values for the connecting point at a level at which the map is rendered in greater detail to the coordinate values of the connecting point at the given level, and then executing processing by using the two-dimensional coordinate values of the connecting point at the given level to which the coordinate values of the connecting point at the level at which the map is rendered in greater detail is attached.

Nakano merely discloses "The node coordinates are information which represents the coordinates in the longitude and latitude directions of the node recorded in the node record NR1. While the absolute longitude and latitude coordinates may be recorded as the coordinates of the node in the longitude and latitude directions, they are usually represented in a coordinate system in which the longitude and latitude widths of the area of the unit U are normalized with values of 2-bytes or so, on the basis of the lower left corner of the unit U (rectangular area) containing the recorded node." (see ¶ [0118] of Nakano).

However, Nakano does not disclose and teach Applicants' claimed language wherein "two-dimensional coordinate values of the connecting point at a level at which the map is rendered in greater detail are attached to two-dimensional coordinate values of the connection point at a given level; and the processing unit executes processing of the map data by using the two-dimensional coordinate values of the connecting point at a given level to which

the two-dimensional coordinate values of the connecting point at a level at which the map is rendered in greater detail is attached” as recited in claim 8.

In view of the foregoing, Applicants’ respectfully submit amended claim 8 is patentable over Nakano.

Moreover, claims 9-12 depend from claim 8 and are also submitted to be patentable. In that regard, nowhere does Nakano disclose including a parameter other than the two-dimensional coordinate values but in addition to them in the information related to the connecting point (claim 10), where that parameter is height information indicating height of the connecting point (claim 11) or time information relating to generation and update of the map-related information (claim 12). Hence, these claims are submitted to be separately patentable over Nakano.

Applicants have amended claim 14 into independent form reciting a map data processing apparatus comprising a recording medium drive unit, an update data acquisition unit, and a processing unit that executes processing of map data based upon map-related information, update data obtained by the update data acquisition unit, and management information.

Moreover, independent claim 14 recites that the map-related information, which is provided in units of individual divisions, is separated into different types of map-related information to be individually managed. The map-related information having the highest priority among the different types is managed by

setting a predetermined upper limit to the size thereof. The processing unit executes processing of the map data by using the map-related information in units of individual divisions where the map-related information having the highest priority among the different types is managed by setting the predetermined upper limit to the size thereof (see ¶¶ [0061] – [0067], [0138]).

As described in Applicants' exemplary embodiment, the different types of map-related information may be basic data and extension data that is individually managed (page 30, lines 3-5). An upper limit size for the basic data may be predetermined, for example 32KB, wherein if an update causes the basic data size to exceed that limit, the excess data is managed as extension data (see page 30, lines 3 – page 31, line 2).

In contrast, Nakano nowhere discloses separating the map-related information into different types to be individually managed by the setting of a predetermined upper limit to the size thereof. Nakano merely discloses that the updating of one cartographic file does not require updating cartographic files of neighboring units (see ¶¶ [0021] and [0023] of Nakano). This is not at all comparable to managing the map-related information having the highest priority by the setting of a predetermined upper limit to its size.

In view of the foregoing, Applicants respectfully submit amended claim 14 is patentable over Nakano.

Moreover, Applicants' dependent claim 5 specifies that the update data exceeding the limit of the highest priority map-related information is managed as map-related information with a lower priority. Hereto, Nakano fails to disclose or suggest such a feature. Hence, claim 15 is submitted to be separately patentable over Nakano. Claims 16 and 17 also depend, directly or indirectly, from claim 14 and are submitted to be patentable thereover.

In view of the foregoing, Applicants respectfully submit the remaining pending claims are patentable over the art of record. An early notice to that effect is solicited.

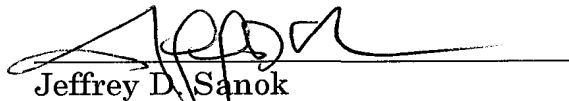
If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

Serial No. 10/514,423
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Attorney Docket No. 029267.55611US

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #029267.55611US).

Respectfully submitted,

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